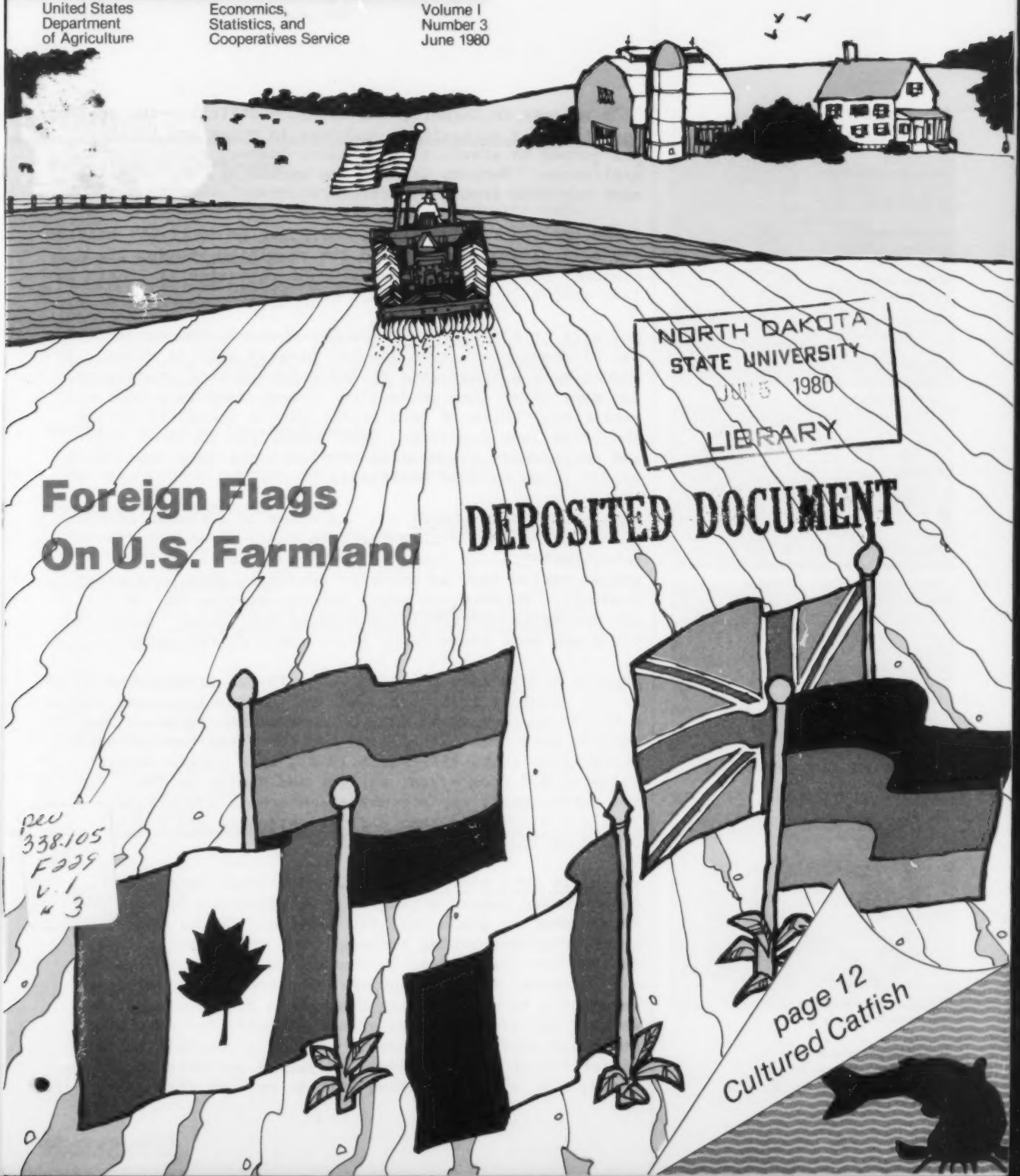
14323

FARMLINE

United States Department of Agriculture

Economics, Statistics, and Cooperatives Service

Volume I
Number 3
June 1980



NORTH DAKOTA STATE UNIVERSITY
JUN 5 1980
LIBRARY

Foreign Flags On U.S. Farmland

DEPOSITED DOCUMENT

Pau
338.105
F223
v. 1
3

page 12
Cultured Catfish

Executive Editor:
Daniel R. Williamson
(202) 447-8302

Managing Editor:
Eric Van Chantfort
(202 447-8302

Contributors:
Francine Zucker
Jane Ross
Barry Murray
Leland Scott

Design:
Deborah Shelton

Layout:
Linda Zelder
Carolyn Fletcher

Contents of this magazine may be reprinted without permission. *Farmline* is published 11 times a year by USDA's Economic, Statistics, and Cooperatives Service.

Subscription price $10 a year ($12.50 foreign). Order from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402. Ask for *Farmline* and make your check payable to Superintendent of Documents. Address single copy requests and editorial correspondence to *Farmline*, Room 505 GHI Bldg., ESCS, USDA, Washington, D.C. 20250.

The Secretary of Agriculture has determined that the publication of this periodical is necessary in the transaction of the public business required by law of this Department. Use of funds for printing this publication has been approved by the Director of the Office of Management and Budget through January 1, 1981.

Use of commercial or trade names does not imply approval or constitute endorsement by USDA or ESCS.

Perspectives

It's no news to farmers, but now it's official--the economy is entering a recession. Weakness in autos and housing has jumped to steel, tires, glass, lumber, furniture, and appliances. Factory layoffs are spreading, and unemployment may rise through yearend.

Blame unrelenting inflation, declining productivity outside the agricultural sector, and the resulting erosion of consumer and business incomes. The recession is likely to last into next year, say USDA economists.

How will it affect farmers? . . . Much depends on individual circumstances; even general impacts will be mixed. It should mean a lower rate of inflation in land, machinery, and many other farm production items. Fuel is a big exception. Costs of farm credit should gradually follow the prime rate downward. Less demand for consumer loans and an increase in personal savings would help ease the credit pinch on farm borrowers.

What about food demand? . . . A slump in consumer spending should not affect demand for farm foods as much as for nonessentials. In fact, it could spur sales of lower priced basics such as chicken, potatoes, rice, and wheat products. However, it might further depress the demand for red meats--particularly premium beef cuts. Restaurant trade and some convenience foods could suffer, too.

Exports should keep climbing . . . Though farm income is in the doldrums this year, U.S. agricultural exports remain a bright spot--now and for the foreseeable future. They totaled more than $21 billion for the first half of this fiscal year (Oct. 1979-March 1980), with cotton export value up 82% from a year earlier and grains up 74%. For the entire year, exports may reach around $38 billion. That's a bit higher than earlier estimates and a substantial jump from 1979's $32 billion.

Watch new crop prospects . . . Aside from the economic downturn and export strength, much attention has focused on movement of grain into the reserve, CCC purchases, and other price-supporting actions. But don't forget that weather here and abroad is a major price factor from now on. Farmers' April intentions to plant about 5 million more acres to major spring crops than last year must be weighed against 1979's outstanding yields for many crops and below normal abandonment. Add in a possible cutback in fertilizer and fuel use. If yields per acre return to trend, U.S. crop production will be smaller than last year.

FARMLINE

Volume I
Number 3

June 1980

FEATURES

Foreign Flags On U.S. Farmland 4

Is America selling out? Fears that foreign investors have staked claim to huge chunks of U.S. farmland are largely groundless, according to a recent study.

Another Revolution In Farming? 7

Without fanfare, a new revolution may be sweeping the countryside, changing the face of American agriculture.

Dollars And Census: Rural America's Big Stake 10

When 1980 Census results are in, they're likely to show some significant population shifts that should mean more money and political clout for many rural, southern, and western areas.

Mad Toms To Queens: Catfish Get Cultured 12

More and more farmers are turning their ponds into underwater feedlots, producing a cultured cat crop that's tastier and more profitable than ever.

Competing For OPEC Markets 16

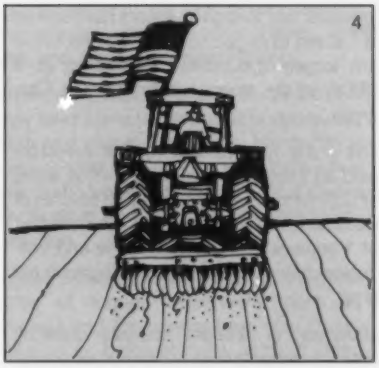
Agricultural sales to OPEC markets have been spurting, but the U.S. faces stiff competition every step of the way.

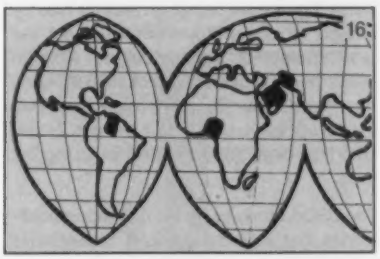
Cotton's Future Looms Brighter 18

Has cotton begun to hold its own in the battle with synthetics? It's too early to be sure, but cotton's future now looks brighter than at any time in the past two decades.

For Pests, It's IPM 21

Reducing crop losses from pests while reducing dependence on environmentally damaging chemicals—that's integrated pest management and it's coming on strong.





DEPARTMENTS

Perspectives 2

Agricultural Roundup 15

Farmline Trends 22

FEATURE

Foreign Flags On U.S. Farmland

Fears that foreign investors have staked claim to huge chunks of U.S. farmland are largely groundless, according to a USDA study recently submitted to Congress.

The study reports that foreign investors held an interest in about 5.2 million acres of U.S. farm, forest, and pasture land as of October 31, 1979. That's less than one-half of 1 percent of the nation's one and one-quarter billion acres of private agricultural land.

Moreover, a detailed analysis covering about 3 million of the 5.2-million-acre total indicated that cropland accounted for only 1 out of every 5 acres reported, with most foreign holdings classified as forest, pasture, or other land.

Also, three-fourths of the land identified as "foreign-owned" was actually owned by U.S. corporations in which foreign interests held a share—in some cases as little as 5 percent.

These figures are based on reports filed by foreign groups and individuals under the requirements of the Agricultural Foreign Investment Disclosure Act of 1978 (AFIDA). The reports identify the foreign investors; the locations, types, and acreages of the land they own; and how they are using the land.

The USDA study of the AFIDA reports concludes that while foreign land ownership is too small to have any national impact on U.S. agriculture, there might be some local effects in communities where foreign holdings are significant.

Foreign Investors In Dixie

Although foreign agricultural landholdings were reported in every state except Rhode Island, foreign investments were heavily concentrated in the southern states.

In fact, three southern states—Tennessee, Georgia, and South Carolina—accounted for a fourth of the foreign acreage analyzed in the report. The entire South contained 39 percent of all foreign landholdings nationwide. Outside the South, the largest foreign-owned acreages were reported in New Mexico, Oregon, Texas, Montana, Colorado, and Nevada.

Question: Which of the following statements are true?

1. Foreign investors want only our cropland.

2. Foreign investors can be blamed for the sharp runup in land prices.

3. When they buy, they take good farmland out of production and push U.S. farmers off the land.

Answer: None of the above, according to this study.

Among all 50 states, however, only three had foreign landholdings exceeding 1 percent of the state's total private agricultural land. In Nevada, the foreign-owned proportion was 1.7 percent; in South Carolina, 1.4 percent; and in Tennessee, 1.2 percent.

In several states, the proportion of foreign acreage was well below a tenth of 1 percent. Two of these—Iowa and Missouri—have some of the tightest restrictions on foreign ownership of the more than 25 states with such laws.

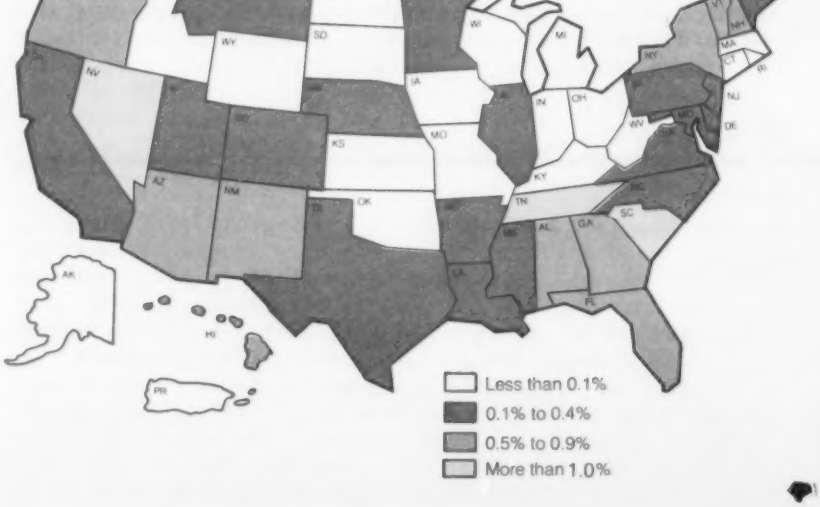
Of course, these percentages are based on the portion of foreign landholdings actually analyzed in the report to Congress, so percentages may rise somewhat when all foreign agricultural holdings are classified.

Corporations With Connections

Of the foreign land investments analyzed, 80 percent of the total acreage was owned by corporations. With few exceptions, these were U.S. corporations—with foreign shareholders having at least a 5-percent interest—rather than foreign corporations. The remaining acreage was owned by foreign individuals, partnerships, estates, and other interests not affiliated with U.S. corporations.

Concentration Is the Key

(Proportion of Foreign-Owned Agricultural Land to All Privately Owned Agricultural Land in Each State, February 1, 1979)



Foreign individuals who reported some ownership of U.S. land outnumbered corporations by more than two to one. However, while the corporations held an average 4,032 acres each, the individuals averaged only 188 acres each and accounted for a mere 8 percent of the foreign landholdings analyzed in the study. Foreign partnerships held an average of 1,279 acres each and owned a tenth of all acreage reported.

Over 40 percent of all foreign owners reporting were Canadians. But their direct holdings of U.S. land or indirect holdings through shares in U.S. corporations accounted for only about 12 percent of all acreage reported.

By far, the British were the largest identifiable nationality group, holding—primarily through their interests in U.S. corporations—a share in nearly a third of all foreign-owned U.S. land. Through direct or indirect holdings, interests from Luxembourg, West Germany, and the Netherlands/Netherlands Antilles each held more than a tenth of foreign-owned acreage.

In many cases, however, foreign investments are made through so-called "dummy corporations" located in countries where the identity of the owner may not be revealed. Thus, the reported nationalities of foreign investors may reflect the nationalities of the foreign corporations which invested their funds in the U.S.—not the countries of actual investors. This explains the prominence, for example, of the Netherlands Antilles among the investors in U.S. land.

Timber Land Predominates

While crop and pasture/range land was the focus of the AFIDA study, about 43 percent of the agricultural land categorized in the AFIDA report was timber or forest land. Many U.S. timber companies are partially or entirely owned by foreigners, particularly the British.

Cropland accounted for only 19 percent of the acres reported, pasture land for another 23 percent, and other land uses for the remaining 14 percent. Together, foreign-owned crop and pasture land represented about a tenth of 1 percent of all privately held U.S. agricultural land.

Measuring The Impact

With foreign investors holding an interest in fewer than one out of 200 acres of U.S. agricultural land, farm resource economists discount any noticeable impacts at the national level. However, a major question still under study is whether relatively high regional or local concentrations of foreign ownership affect individual areas or communities.

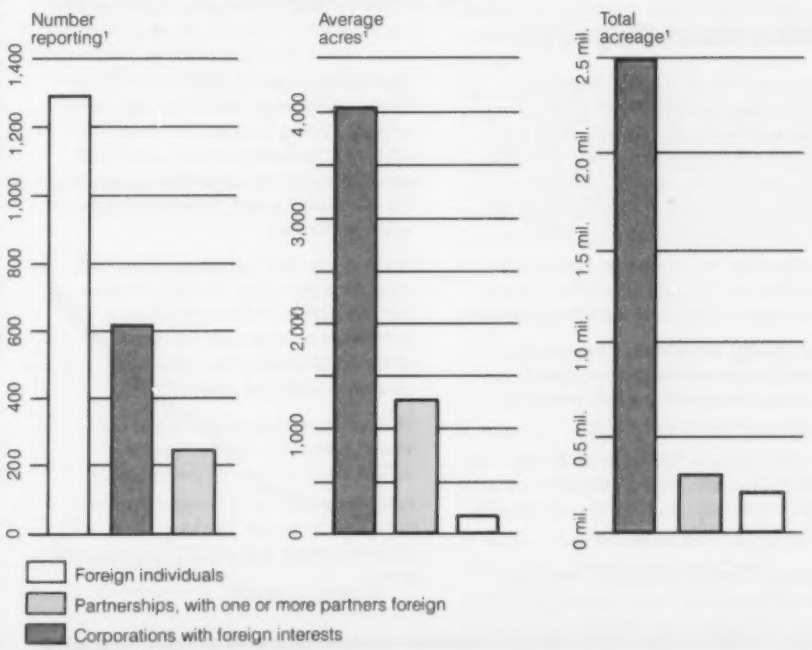
USDA and university researchers are examining possible localized effects of foreign investment on land prices, farming opportunities, resource management, land use, and agricultural productivity.

Each new investor—foreign or domestic—may have some impact on land values, say farm real estate specialists, but because foreign investments account for such a tiny portion of the land marketed, they are not likely to have a strong influence in any direction.

In fact, some of the states with the highest rates of foreign investment, such as Georgia and Tennessee, have only shown average or below-average gains in farm real estate prices.

At the same time, states such as Kentucky, Wisconsin, and Minnesota, with low rates of—or restrictions on—foreign investment have experienced above-average increases in farmland prices.

Corporations Lead in Foreign-Owned Acreage Mix



[1]Based on a detailed analysis of 3,619 AFIDA report forms accounting for 2,200 foreign owners and 3.1 million acres of landholdings and acquisitions.

The Farm Opportunity Question

Another concern has been the effect of foreign ownership on farming opportunities. Foreign investors, as absentees, generally rely on hired managers and tenants to operate their land. This has raised the question of whether foreign investment can limit the availability of land to U.S. farmers.

However, ownership has traditionally been only one of the ways that U.S. farmers gain access to land for farming. Nearly 40 percent of U.S. farmland is leased, and most of that from nonoperator—and frequently absentee—landlords. Foreign owners may displace a few U.S. landlords, but it seems unlikely that they significantly affect the tenure structure in agriculture.

Moreover, the available evidence suggests that many foreign owners retain whoever was farming the land when it was purchased. A change in operator was reported for only about a fourth of the acreage recently acquired by foreign investors.

Other changes in tenure arrangements may be more likely—reflecting, for example, a marked preference for cash rather than crop-share leases—but these are probably similar to the tenure policies of any distant landlord.

Commitment To Land And Community

Another important issue is the quality of stewardship over the land and its retention in agriculture. Although questions relating to the efficiency of management may require further study, the overwhelming majority of foreign owners filing under AFIDA reported no intentions to change the use of the land.

No change in use was reported for 95 percent of the acreage involved, and foreign holders of only 1.5 percent of the land had plans to convert some acreage to nonagricultural use. Also, there was no indication that foreign ownership results in idling the land.

In fact, studies suggest that foreign owners tend to increase production and intensify land use by clearing additional cropland, irrigating former dryland, and converting native pasture to improved pasture. Under current tax laws, there are big incentives for investors with higher incomes—foreign or U.S.—to invest in land improvements and conservation.

Finally, foreign investors do not appear to be a factor in the farm population decline, since their land continues to be farmed by the same operator or a local replacement.

More To Learn

U.S. tax laws, the decline in the dollar, and conditions in many other nations have certainly made U.S. farmland, with its steadily rising value, an attractive investment. However, it now seems abundantly clear that some early fears about a foreign rush on U.S. farmland were exaggerated.

Nevertheless, USDA will continue to monitor foreign investment patterns through the AFIDA reports and will continue reporting on the extent and impacts of foreign ownership in U.S. agriculture.

Other studies are also being conducted. Under a cooperative research agreement with USDA's Economics, Statistics, and Cooperatives Service, Iowa State University researchers are looking at patterns of land use, productivity, land prices, conservation, input purchases, and related subjects to determine whether the economic implications of foreign ownership differ from those of domestic ownership, both local and absentee.

In the months ahead, many of the questions that remain about foreign investment in U.S. farmland are likely to be answered. The answers may not settle this controversial issue, but they should give both supporters and opponents of foreign investment restrictions a better idea of their ground—and who owns it.

Who Must Report?

The Agricultural Foreign Investment Disclosure Act (AFIDA) of 1978 became effective in February 1979. It required all nonresident aliens who held U.S. agricultural land as of February 1, 1979, to file a report of such holdings with USDA as of August 1, 1979.

From then on, those who acquire or dispose of U.S. agricultural land must file within 90 days of the transaction.

All foreign individuals, governments, and other legal "entities" based in, or created under the laws of, a foreign country are required to file.

There is also a provision to identify foreigners who hold an interest in U.S. land indirectly, such as through their shares in a U.S. corporation.

Report forms are available from, and must be filed with, the ASCS office serving the county where the land is located. Failing to report, or filing late, false, or misleading reports, can result in civil penalties of up to 25 percent of the fair market value of the owner's interest in the land.

Agricultural land is defined as all land used for agricultural, forestry, or timber production. It does not include homesites or land used for recreation or home gardening that does not otherwise meet the requirements.

USDA has responsibility for the continued collection and analysis of AFIDA data, as well as enforcement.

Further details on the reporting requirements under AFIDA can be obtained from any ASCS county office.

Another Revolution in Farming?

Changes underway in American agriculture may be as far-reaching as earlier revolutions in farming, according to USDA economist Lyle Schertz.

Involved is a transformation in the organization and management of U.S. farms, brought about by changes in the size of farms, form of ownership, use of capital goods, distribution of risks, and credit use.

Periods of dramatic change aren't new to U.S. agriculture. Agricultural historians call the period in which horses were substituted rapidly for hand labor the first U.S. agricultural revolution. In the second revolution, tractors were substituted for horses.

Those two revolutions centered heavily on technological breakthroughs. This one lacks such a clear focus—although technology is substantially involved in today's changes—because many forces are involved.

Specifically, Schertz identifies seven key forces which have affected the way farms are organized and managed: inflation; the increased role of farm product exports; capital intensive new technologies; nonfarm jobs for rural people; availability of institutional credit for purchase of land and capital goods; commodity programs supporting farm product prices; and new tax rules.

Key Forces

While none of these factors is, by itself, enough to turn the agricultural world topsy-turvey, their combined effects are to transform the organization and management of U.S. farming:

• *Inflation* strengthens the relative economic position of the wealthier and higher income people in buying land. While increasing the wealth of landowners, it makes it more difficult for new entrants into farming to acquire needed land.

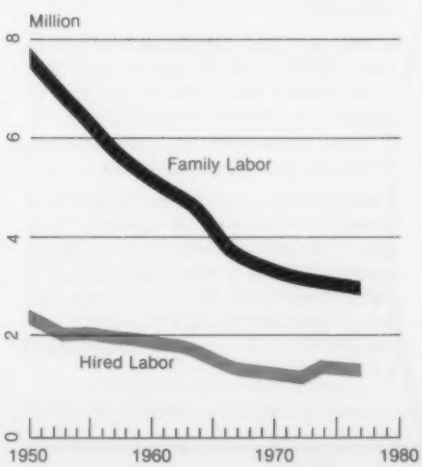
• *Exports* contributed significantly to the sharp upturn in farm earnings in the 1970's, created acceptable prices and farm income with only modest production restraints, and created new markets for corn and soybeans. Another effect has been greater specialization in the Corn Belt.

• *Capital-intensive new technologies* have enabled some individuals to control larger amounts of land and other production resources. Machines, for example, make possible substantial economies of operation and thereby large-scale farming. This increased use of capital-intensive technologies has meant decreased labor requirements.

• *Nonfarm job opportunities* made it possible for farm people to migrate to the cities and towns and be better off economically than if they had stayed in rural areas.

• *Availability of credit* for land and equipment purchases can determine who survives in farming. With inflationary conditions, people—both farm and nonfarm—with sources of money other than income from the land being purchased have a clear competitive edge over others.

Number of Farmworkers



• *U.S. farm programs* have also tended to encourage the shift toward large-scale farming by supporting commodity prices. "By reducing the risk of price declines, the programs enhance the confidence of people aggressively willing to accumulate land and/or invest in capital goods that facilitate large-scale production of commodities," Schertz says. Also, lenders are encouraged to extend credit to such people, since the risks of commodity price declines are diminished.

• *Income and estate tax rules* have made farm ownership more attractive, thus leading nonfarm people to invest for tax advantages. These rules also encourage farmers who are able to exploit tax opportunities to increase the size of their farms. Another effect is to lead to more corporate farms.

While each factor has a strong individual impact on farming, that effect often increases when taken in tandem with other factors.

For example, the effects of increased farm exports on U.S. farming were greater because tax rules allowed cash accounting and tax credits for investments. And the effect of inflation combined with increased credit availability is greater than if either factor had occurred alone.

Into The Future

The sustained, combined effects of these seven major forces in the future, Schertz concludes, will lead to:

• Further declines in farm numbers, but—in continuation of 1970's trends—at a slower rate than in the 1950's and 1960's.

• Increasing concentration of production among the largest producers.

• Strong pressures for increased separation of ownership and resources used in farming, such as land. For example, the practice of renting land is likely to increase.

Perhaps the most worrisome unknowns are the effects of higher energy prices.

"The higher energy prices are bound to affect the mix of resources used in farming and location of production," Schertz says. "There will be increased economic incentives to use energy-efficient systems of production, but the eventual effect on how U.S. production of livestock and crops is organized and managed is highly uncertain."

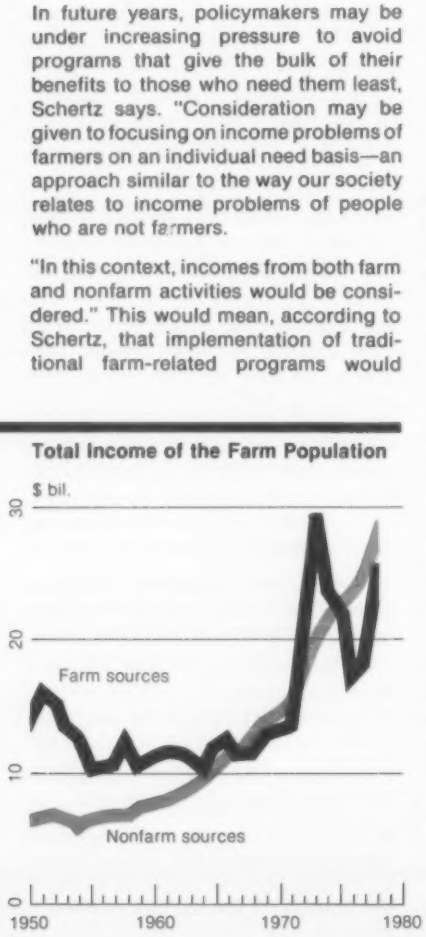
As American agriculture strives to accommodate these changes in coming years, government policymakers also face some adjustments.

In future years, policymakers may be under increasing pressure to avoid programs that give the bulk of their benefits to those who need them least, Schertz says. "Consideration may be given to focusing on income problems of farmers on an individual need basis—an approach similar to the way our society relates to income problems of people who are not farmers.

"In this context, incomes from both farm and nonfarm activities would be considered." This would mean, according to Schertz, that implementation of traditional farm-related programs would emphasize such national economic objectives as price stability, employment, and balance of trade, and not necessarily farm income.

"Thus," he says, "changes in the way programs are implemented may be as dramatic as changes in farming—and equally revolutionary."

Total Income of the Farm Population



Livestock Sector

The changes which have swept across American farms and ranches over the past several years haven't hit all sectors with equal impact. Among the most dramatically affected is livestock production.

The move toward concentration in cattle feeding and in poultry and egg production has been great. Half of all cattle fed in the U.S. are handled by more than 400 feedlots averaging over 30,000 head per year.

As for poultry, about 5,000 farms with 20,000 or more birds account for 70 percent of all U.S. egg production. And 16,000 to 17,000 farms with 60,000 or more broilers account for 90 percent of that production.

In the hog industry, concentration is also occurring, but at a slower rate—with 10,000 farms accounting for a fourth of all hog sales, and with 15 or 20 firms annually marketing 50,000 to 200,000 head each.

In the past, such large-scale operations were discouraged by lack of labor and management skill and by the risk of disease in large confinement operations. If these large-scale ventures succeed, more concentration may follow.

Dairying has become a specialized farm activity of commercial farming. Only about 200,000 commercial dairy farms operate—about a third the number in 1950. Large-scale production units are being operated successfully in California and Arizona—possible harbingers of a new trend.

Regional Changes

The changes in U.S. farming have affected different regions in different ways.

All regions have had declines in farm numbers and increases in farm sizes. But individual characteristics of each region tend to diminish—or accentuate—the various forces of change.

In the Northeast, regional forces which are shaping agriculture include scarcity of productive land, government policies and cooperative activities affecting the milk industry, and competition from producers in other regions because of low transportation costs.

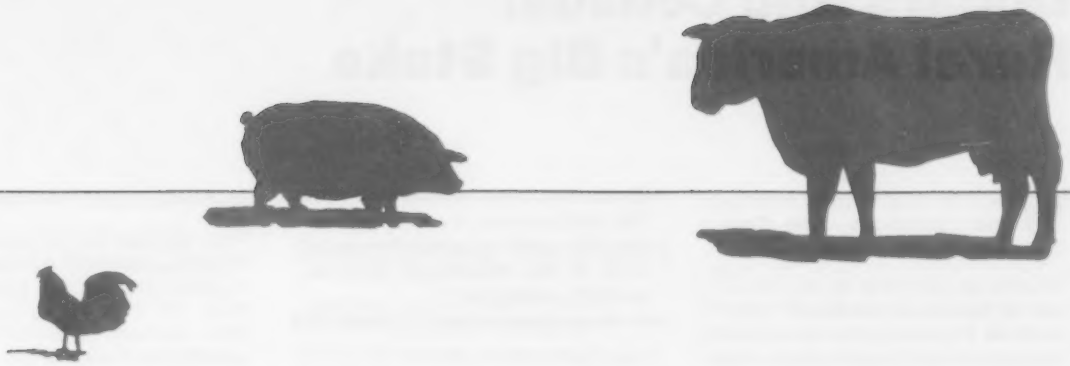
North-Central farmers are influenced by the effects of increased exports of corn and soybeans, the effects of commodity support programs, and by historical and topographical aspects that facilitate land consolidation into larger farms.

In the South, the flat Delta terrain encourages farm enlargement, while the hilly countryside in other parts of the South retards such consolidation.

Great Plains producers are continually affected by water scarcity, by increasing wheat exports over the past decade that tend to boost production acreage, and by abundant feed grain supplies which encourage development of feedlots.

Southwest farming tilts toward large-scale and diverse operations due to the arid climate and prevalence of irrigation.

In the Northwest, water resource policies, federal policies related to labor, distances to major markets, and urbanization have helped shape agriculture.



there. These forces, combined with availability of new technologies and with federal commodity programs, have encouraged irrigation, helped decrease farm numbers, boosted consolidation, and linked production from individual farms to a growing food processing industry.

Emerging Issues

As these and other trends emerge and become clearer, a multitude of uncertainties remain to cloud the future of U.S. agriculture.

Energy, water, the unionization of farmworkers, possible restraints on technological developments, and other such factors could greatly alter existing trends—which show a slowing of the decline in the number of small farms, a further decrease in the number of middle-sized farms, and an increase in the number of large farms.

"Public debate in the 1980's likely will focus on the increased concentration of production among larger farms and the ever-decreasing marketing opportunities for small farmers," Schertz predicts. "But these issues may be of secondary importance to another related issue—the separation of ownership and use of resources.

"This separation may increase, especially with respect to land."

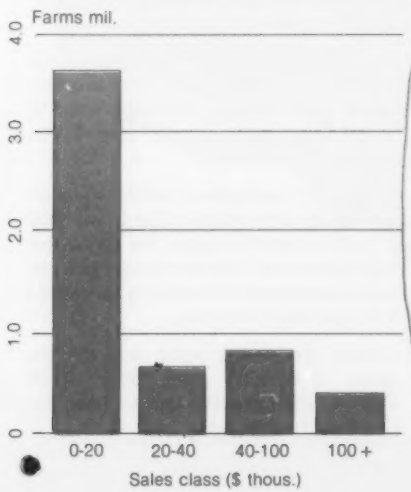
The value of even a moderate-size farm is often so high that it can be difficult for a family to pass its resources to a single child, even with favorable tax rules.

"Thus," Schertz says, "ownership of individual land parcels in the next two decades will involve multiple ownership by descendants of those who experienced the capital gains of the 1970's.

"Some children not farming will want to sell their interests, but family people may not be able to buy and potential buyers may not be farm operators. In fact, those family members farming likely will prefer that sales be made to people willing to rent the land to them.

"The magnitude of these developments probably will be much greater than likely sales to non-Americans. However, the characteristics of the operators and the resulting organizations and management of farms may not be greatly different."

Farm Distribution by Sales Class, 1978



For Further Information

A summary of the report from which this article was taken is available from USDA's Economics, Statistics, and Cooperatives Service.

Assembled by Lyle P. Schertz, the 9-page publication includes material by several USDA authorities: Beef by J. Rod Martin; Dairy by Robert H. Forste and George E. Frick; Poultry and Eggs by Roy N. Van Arsdall and Henry C. Gilliam; the South by W.C. McArthur; the Great Plains by William Franklin Lagrone; the Southwest by Stanley S. Johnson and Edward V. Jesse; and the Northwest by Donn A. Reimund. Schertz authored chapters detailing a national overview, Northeast, and North Central agriculture.

According to Schertz, the book "can contribute to an enlightened dialogue about the related issues" that arise from changes in U.S. farming, examines why these changes occurred, then projects these trends into the future.

The summary can be ordered free from: ESCS Publications, Room 0054-S, U.S. Department of Agriculture, Washington, D.C. 20250. Ask for *Another Revolution in U.S. Farming, Summary Analysis* (AIB-433).

FEATURE

Dollars And Census: Rural America's Big Stake

What's at stake for rural Americans when preliminary 1980 Census results are compiled in August?

The findings, along with those of the Census of Agriculture (conducted every 5 years) will influence government programs which directly affect each farmer and rural resident, according to USDA's population expert, Calvin Beale.

Federal agencies will use the data on age, sex, race, family structure, and living conditions to allocate more than $50 billion to 39,000 jurisdictions—including rural counties and communities.

For example, FmHA, the rural credit agency of USDA, used Census information in allocating $14.6 billion for 1979 programs. Extension services, land and water conservation, water and waste disposal, housing and community development, employment training, and community action programs also serve rural areas and depend on federal funding.

Shifting Population

With so many government programs tied to data on population and economic conditions, rural areas have a particularly big stake in this 1980 Census. That's because the population changes that have occurred since the last Census in 1970 are likely to divert a greater share of the funds to rural and farm areas.

During the 1970's, growth rates in rural areas exceeded metropolitan rates for the first time, with the possible exception of a brief period during the Great Depression. Between 1970 and 1978, the nonmetropolitan population increased by 10.5 percent compared with a metropolitan growth rate of 6.1 percent.

Beale explains why. Jobs are increasing faster in rural areas, especially in services, trades, and construction. Because of improved pensions and early retirement, retired people are also flocking to settle in rural areas. Quality of lifestyle is another important reason for the rural move.

Beyond these population changes, there is also a shift to the south and west. "In 1980," Beale predicts, "we may for the first time find the center of population to lie west of the Mississippi River—a symbolic milestone."

"In 1980, we may for the first time find the center of population to lie west of the Mississippi River—a symbolic milestone."

In the House of Representatives, implications of the shift are more than symbolic. The Census Bureau estimates that about 14 congressional seats will shift to the west and the south when 1980 figures become available. All will come out of the north and all but one (South Dakota) from east of the Mississippi River.

South And West To Gain Seats At Expense Of North

States that would gain or lose congressional seats if 1979 state populations were used to reapportion the U.S. House of Representatives.

Gainers and number of seats:		*Losers and number of seats:*	
Arizona	1	Illinois	2
California	2	Massachusetts	1
Colorado	1	Michigan	1
Florida	3	New Jersey	1
New Mexico	1	New York	4
Oregon	1	Ohio	2
Tennessee	1	Pennsylvania	2
Texas	2	South Dakota	1
Utah	1		
Washington	1		
TOTAL	14		14

Source: U.S. Bureau of the Census, Current Population Reports, P-25, No. 868, July 1, 1979, provisional state estimates.

Stemming The Urban Bias

Even with the mountains of information collected, there is still a fundamental need to supplement Census data about rural areas with more detail. By providing detailed analyses to policymakers, Beale seeks to stem what he sees as "evidence of urban bias" in many government programs.

Rural areas have special needs that are not necessarily served by applying urban criteria to programs in rural communities.

For example, using population density data to determine the adequacy of health care services may make it appear that the entire state of Wyoming needs only four maternity hospitals to provide the same availability of services as a major city. Obviously, other factors, such as the distances people have to travel to use community services, must also be considered.

Backing Up Rural Polices

This growing need for information has spawned another attempt to provide systematic data on rural areas: the National Rural Community Facilities Assessment Study. The $3 million, 3-year study will produce results to fill a void.

"For the first time," says Richard Long, USDA liaison for the study, it "promises a look at all rural facilities and a measure of their inadequacies."

The study seeks to shed light on the long-held suspicion that rural people are underserved in, for example, fire protection and water quality, services that other Americans take for granted.

For USDA to administer grants and loans intelligently, according to Long, "we have to know where the people are and where the facilities are." It's not enough to know that a community is shrinking but where the population is shifting.

Census information, along with the detailed information from other USDA studies, will provide a strong base for USDA policies regarding rural areas.

Here are some of the findings expected when the 1980 Population Census results are made public by the end of the year:

- **A shift in population toward rural areas and western and southern states.**
- **More farm women employed and a decline in the birth rate of farm families.**
- **Higher educational levels and improved housing conditions of farm families.**

Questioning The Count

"Everyone wants something—funds for poverty programs or revenue-sharing to keep the lid on taxes," says USDA's Calvin Beale about the Census and its effect on the allocation of government funds.

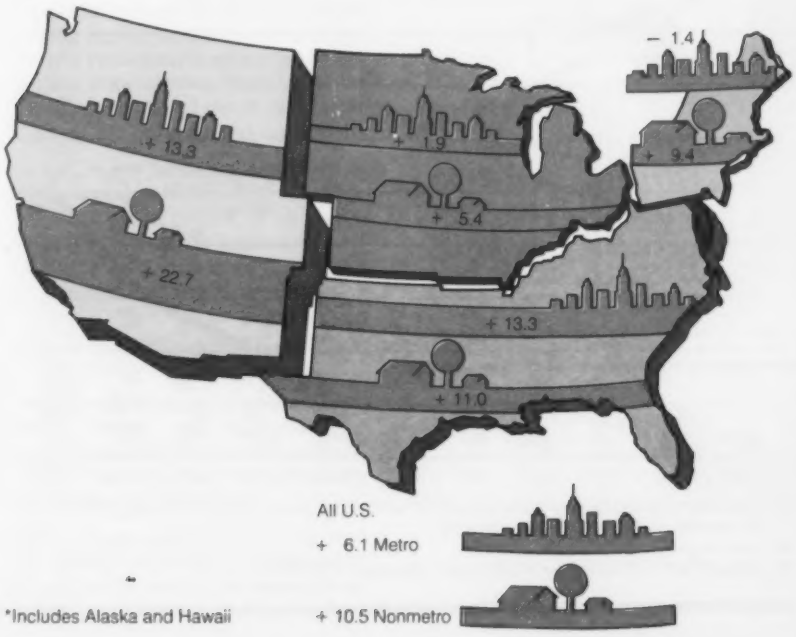
Since funds and services are influenced by census numbers, undercount is a major concern.

Back in 1790, the year of the first Census, the residents of Wilmington, N.C., complained to George Washington that the count takers goofed. Now, the right count matters much more, Beale says.

In the 1970 U.S. Census, 2.5 percent of the population missed a count. Undercount varied from very little in states like Wisconsin, Utah, and Minnesota to 9 percent in New Mexico—9 out of 10 undercount states had large rural populations.

"It's not possible to estimate what the dollar loss is to each individual missed," Beale says. But any community whose undercount is above average will not receive as much federal or state support as it's entitled to get.

U.S. Population Is Shifting South, West, and Rural
(Percentage Change in Population, 1970-78)



*Includes Alaska and Hawaii

From a drawing by Thomas Worth.

Mad Toms To Queens: Catfish Get Cultured

Mad Toms and Mud Cats, Fiddlers and Bullpouts—they've been called everything, but the image of the wild catfish is changing. Farm-raised varieties with names like "Lady Anne, Queen of Cultured Catfish" are in the spotlight now.

In the burgeoning catfish industry, more and more farmers are turning their ponds into underwater feedlots, producing a tastier and more profitable product. Beginning this year, they will also be turning to USDA for data on farm-raised catfish production.

The monthly *Catfish* report, which the Crop Reporting Board began issuing in February, provides the only statistics on the catfish industry on a regular basis. Published as the *Farm-Raised Catfish Processors' Report* by the Department of Commerce since 1969, it was moved to USDA because of the increasing importance of aquaculture (underwater food production) in agriculture.

The monthly reports present data collected from the farm-raised catfish processing plants having production capacity of at least 2,000 pounds (live weight) per 8-hour day. The reports include average prices paid to farmers, net catfish sales, and pounds of catfish processed.

Although the Crop Reporting Board does not normally reveal names of individuals or companies surveyed, the new catfish report will include, with their permission, a list of the catfish processors, continuing the Commerce Department custom.

Catfish Coming On Strong

While even the most avid catfish enthusiasts admit that this bewhiskered, bottom-feeding fish is unattractive to behold, they declare that its taste more than compensates. Many consumers agree. Rapid growth in the industry is reflected in the catfish reports over the past 11 years. In 1969, five plants processed 3.2 million pounds (live weight) of catfish. Of the five, only one, after extensive management changes, has become a major processor. By 1979, 10 plants processed 40.6 million pounds.

But the growth trend hasn't been constant. During the first few years, processed production grew 40-50 percent each year. During 1973, production growth slowed to 7 percent, and output actually declined in 1974 and 1975 because of a general economic slowdown and the high cost of feed.

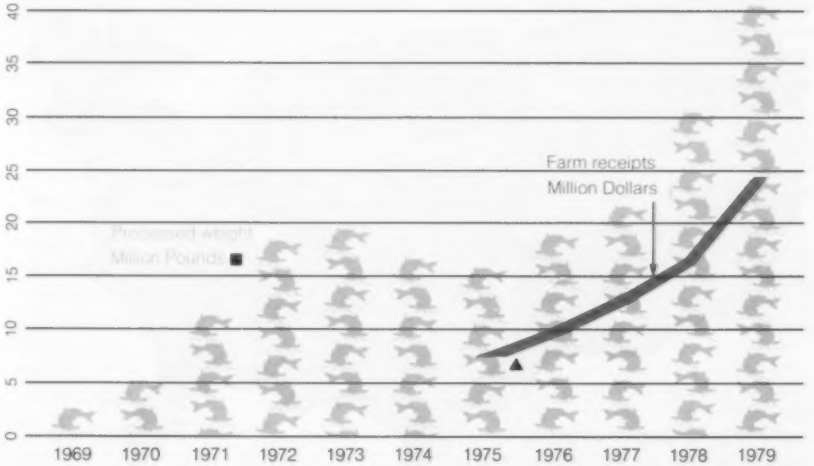
The tight grain supplies and sharply rising feed costs of the mid-1970's forced catfish feed producers to reduce the protein content of feed below the 28-30 percent minimum requirement established by government and private research. This lengthened the time it took to raise the fish.

In 1976, a turnaround in the economic situation signaled the beginning of a slower, but more stable era. Processed production grew 18 percent in 1976, 17 percent in 1977, 36 percent in 1978, and an estimated 35 percent in 1979.

The growth trend has been measurable in dollars since 1975 when the Department of Commerce began collecting data about the value of the catfish crop to the farmer. In that year, the total revenue received by farmers was $7.8 million. By 1979, the figure had tripled, reaching almost $25 million.

The rapid gains in production since 1977 can be largely attributed to two developments, according to James W. Ayers, a fishery marketing specialist at the Commerce Department.

Making a Splash: Farm-Raised Catfish *



* Total weight of and farm receipts from catfish sold to processors. Does not include catfish sold for recreational fishing or other purposes.
■ Live weight.
▲ Data on farm prices and earnings weren't collected before 1975.

First, farmers have improved their harvesting methods. By controlling the mesh size of their nylon seines (large nets which hang vertically in the water), they can remove the mature fish needed from the pond while leaving the smaller fish behind to grow. An improvement over clearing the pond of all fish annually, the controlled harvesting can be done 3 or 4 times a year, yielding more production per acre.

A second development has been the formation of feed supply cooperatives by catfish producers. The cooperatives help assure members of a reliable supply of quality catfish feed at bulk-discount prices. Three cooperative feed mills operate in the lower Mississippi River basin, the leading region in farm-raised catfish production. Some seven or eight private firms also manufacture catfish food.

Keeping Up With Production

With the growing production, catfish producers must expand their markets. The key is an efficient processing industry that will provide a regular supply of quality fish to retail and institutional markets like restaurants and supermarkets. That's where the Crop Reporting Board report is focused: processed fish going to food markets.

However, most harvested catfish never reach processing plants. Only 41 million pounds—30 to 40 percent of all catfish produced on the farms—is processed. Another 30 to 40 percent goes to the "live haul" recreational market. The remaining 20 percent is sold through miscellaneous outlets, such as direct sales to consumers, or to organizations for fish fries.

So there's a big data gap for nonprocessed catfish. "We've only scratched the surface," says USDA economist Dwight M. Gadsby. "The producers have practically built the industry themselves."

Already, though, gathered data may lead some farmers to ponder the potential of that pond as an underwater feedlot for an extra cash crop.

Demand for farm-raised catfish, along with other fish, is likely to grow. In 1978, Americans ate nearly 14 pounds per capita of fish (all types), indicating a small, steady rise since 1969. Until 1969, consumption had held steady at about 11 pounds per year since the early 1960's. Of the quarter pound of catfish per capita consumed by Americans between 1975-79, fresh catfish outsold the frozen and ice-packed varieties by a 3 to 2 ratio.

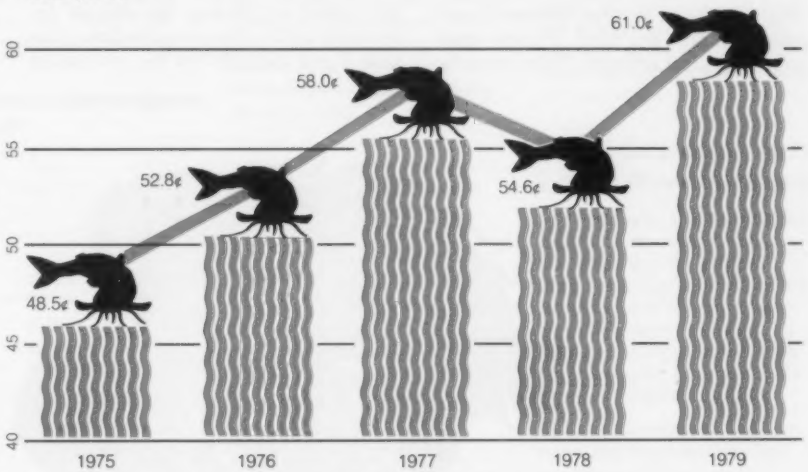
Getting Into The Business

An estimated 5,000 U.S. farmers in aquaculture now raise catfish for harvest. But only 300 of them farm 250-and-more water acres, sometimes producing 10,000 catfish per acre per year.

Despite the expanding market for catfish, a new producer's odds of succeeding are slim. About 95 percent of the new entrants to aquaculture drop out because of finances.

Catfish Prices Heading Upstream

Average prices paid to farmers
Cents per lb.



Source: National Marine Fisheries Service, U.S. Department of Commerce

Catfish farmers buy fingerlings and feed them high protein food. The feeding process, which fattens the fingerling to 1.5 pounds, takes about 7 months. Fish are the most efficient converters of feed into meat. A catfish farmer gets 1 pound of catfish for 2 pounds of feed.

While operating costs are also substantial, a large initial capital investment is needed for getting started. First, the catfish producer needs to acquire a farm with two or three ponds, covering a total of about 50 acres. The investment in equipment, such as pumps, wells, and aerators, is also large. In farms of at least 160 acres, the capital investment averages $2,000 per acre.

Once the facilities, equipment, and fingerlings are brought together, the next investments are time and labor. The fish need almost constant attention. Ponds must be cared for; undesirable, wild fish that compete with the farm-raised crop for food must be removed; oxygen, feed, water levels, water quality, and acidity must be checked daily; and mud and silt must be cleaned from the pond.

In addition, the water supply, usually from wells, must be aerated to prevent fish kill caused by lack of oxygen—a common fish farming problem. Aeration also purifies the water to make it suitable for domesticated fish.

Assuming that a good crop of catfish results, getting them from pond to processor is the next major job. With the pond partially drained, farmers use seine-hauls, stretched from bank to bank, and operated by tractors at opposite sides. Hydraulic lifts assist in hoisting the harvest for weighing and in depositing the fish in the tank trucks destined for the processing plant.

Coming Up: More Research

Major plans are underway to provide much needed information about the catfish industry and aquaculture in general. A five-year plan, "Aquaculture—a Program for Eighties," was put together at the request of the Secretary of Agriculture.

Awaiting total funding, the plan is a compilation of priorities representing the contributions of many aquaculture specialists outside government. It calls for "an array of activities ranging from research and technology programs, marketing and economic analyses, to food safety and consumer acceptance work."

As the initial step in this plan, $170,000 in USDA funds has been earmarked for a catfish survey (along with trout) which will begin this summer in 12 key states. Survey data will include sales volume; number of producing operations and fish inventory; sales by market sources; losses to parasites, disease, oxygen depletion, pesticides, and floods; age of facilities and proposed construction of ponds, raceways, tanks, and cages; and sources of funds for construction.

The Crop Reporting Board's *Catfish* report is issued around the 25th of each month. To be placed on the mailing list, write the Crop Reporting Board, ESCS, USDA, Room 0005-South, Washington, D.C. 20250.

For further information about growing farm-raised catfish, write Mark Freeman, Executive Secretary of Catfish Farmers of America, P.O. Box 1609, Jackson, Mississippi 39205, or phone (601) 354-6569.

Agricultural Roundup

Big Crops Coming?

As of April 1, farmers intended to increase this year's corn acreage by 3 percent from last year, sorghum acreage by 5 percent, and barley acreage by 2 percent. They planned to trim oat acreage by 3 percent, which would result in the smallest oat plantings since the late 1800's.

A big increase was planned for spring wheat, with durum acreage up 37 percent from last year and other spring wheat acreage up 10 percent.

Surprisingly, soybean growers reported intentions to trim plantings less than 1 percent, despite this season's discouraging prices. However, sunflower producers intended a sharp rollback from the record area they planted last year.

Meanwhile, encouraged by the recent strength in cotton prices, farmers were scheduling a 6-percent rise in cotton plantings.

Dry bean growers expected to plant 21 percent more land in 1980. The reason: current price strength following the recent contract with Mexico to provide 1980-crop dry beans.

Of course, farmers may have altered their early intentions before they began planting. USDA's first estimates of actual plantings to corn, soybeans, spring wheat, cotton, and other spring-planted crops will be issued on June 27 and will be followed on July 11 with forecasts of yields and production.

Farmers Plan To Expand Grain Acreage

Crop	1978 plantings	1979 plantings	1980 intentions	1979 to 1980
	thousand acres			percent change
Feed grains	122,761	117,616	120,149	+ 2
All corn	80,052	80,011	82,022	+ 3
Sorghum	16,468	15,399	16,201	+ 5
Oats	16,245	14,146	13,694	– 3
Barley	9,996	8,060	8,232	+ 2
Food gains[1]	69,248	74,558	82,702	+ 11
All wheat	66,255	71,558	79,487	+ 11
Winter[2]	47,893	51,919	56,841	+ 9
Durum	4,110	4,042	5,555	+ 37
Other spring wheat	14,252	15,597	17,091	+ 10
Rice	2,993	3,000	3,215	+ 7
Oilseeds[3]	69,632	79,758	78,309	– 2
Soybeans	64,383	71,586	71,292	(5)
Sunflower	2,840	5,555	4,450	– 20
Peanuts	1,544	1,550	1,543	(5)
Flaxseed	865	1,067	1,024	– 4
Cotton	13,360	14,006	14,843	+ 6
Hay[4]	61,515	61,162	60,527	– 1
Dry edible beans	1,531	1,453	1,757	+ 21
Dry edible peas	204	139	130	– 6
Sweetpotatoes	124	129	121	– 6
Tobacco[4]	948	830	929	+ 12
Sugarbeets	1,304	1,161	1,204	+ 4

[1] Excludes rye; rye plantings were published in December 1979 in the *Small Grains* report along with winter wheat. [2] Estimated December 1979. [3] Excludes cottonseed. [4] Area harvested. [5] Less than 0.5 percent.

Fertilizer Use Slumps

Half a year ago, forecasters were betting that farmers would use more fertilizer this spring than last. By April, the odds had reversed.

Tight credit and sharply higher prices for fertilizer, energy, and interest were encouraging farmers to cut costs where they could. For many, that meant easing up on fertilizer use, according to USDA economist Dick Rortvedt.

For the entire fertilizer year, which ends on June 30, the decline in use may average anywhere from 3 to 7 percent, Rortvedt predicts. However, sales this spring probably slumped much more than that because many farmers tried to get a jump on rising prices by stocking up last fall and winter.

Domestic supplies are up sharply —14 percent from a year ago— so even strong export demand won't be enough to hold up prices. In early May, forecasters were predicting that sagging spring demand would cause fertilizer prices to level off or even decline by late June.

Early May fertilizer prices were running about a fourth higher than a year earlier, with phosphate prices 35 to 40 percent higher.

Although prices did not increase as much as they did in 1974/75, fertilizer/crop price ratios this spring were worse. For example, it took more bushels of corn or wheat to buy phosphate and potash this spring than it did back in spring 1975.

In 1974/75, nitrogen use dropped about 6 percent and phosphate and potash each declined 12 percent. This year, phosphate use may drop 7 to 13 percent, but potash consumption may fall only 3 to 7 percent. Nitrogen use could range from last year's level to 3 percent less.

Some observers have speculated that reduced fertilizer use could result in smaller crops than might otherwise be expected.

However, Rortvedt points out that short-term reductions in farmers' use of phosphates and potash should not result in significant yield declines because both nutrients carry over in the soil from year to year and soil fertility has been maintained at high levels on much U.S. cropland.

Annual application of nitrogen is much more critical, but there may be little or no decline in its use. On the other hand, farmers have indicated plans to increase plantings of wheat and corn this spring, and both crops are intensive nitrogen users. In order to cut costs, farmers are likely to reduce nitrogen application rates on these crops.

Beef Grades: Lean Awareness

Two years after USDA beef grading standards changed to move the top third of the previous Good grade beef into Choice and the top third of formerly Choice into Prime, most consumers apparently could not tell the difference, according to a 1978 USDA survey of 1,300 homemakers.

Close to four-fifths of those surveyed said they hadn't noticed any changes in beef quality.

Most homemakers also said that grade designations were important in determining where they shop for beef. However, while 42 percent when shown a list cited Choice as a beef grade, 35 percent picked "Grade A" beef, a bogus designation.

Nearly 40 percent of consumers lacking a high school education didn't know what grade they had bought, and 17 percent who had gone to college didn't know. In visual preference tests, they did prefer leaner beef cuts other than the Prime grade.

Competing For OPEC Markets

Rising sales of U.S. farm goods to some of the 13 member nations of OPEC may provide a silver lining in the cloud of higher oil prices.

Even so, the loss of Iran, a $415 million market in 1979 and in recent years the largest OPEC purchaser of U.S. farm goods, will probably prevent a gain this year. Sales may total around last year's $2.2 billion.

Since 1973, when oil prices began their upward spiral, OPEC has become one of the fastest growing markets for agricultural products, and U.S. farmers have captured a large share of the increased trade. In 1978, U.S. sales of farm goods to OPEC reached a record $2.4 billion—up from the $1.7 billion of 1977 and more than five times the value at the start of the decade.

About four-fifths of the 1979 sales went to five countries—Iran, Venezuela, Indonesia, Saudi Arabia, and Nigeria. The U.S. is a major supplier of grains (including rice), vegetable oils, and cotton.

Wheat, rice, and feed grains account for nearly two-thirds of U.S. agricultural exports to OPEC, although these items comprise only a fourth of OPEC's total agricultural imports.

American farms provided more than half of the wheat imported last year by OPEC, one-third of the rice, and one-fourth of the feed grains.

Cashing In On Oil

OPEC's stepped-up buying is, of course, the result of the rapid rise in oil prices since 1973. Although its oil production and export volume have not exceeded 1973's levels, price rises have boosted its petroleum revenues from $25 billion in 1973 to nearly $200 billion in 1979.

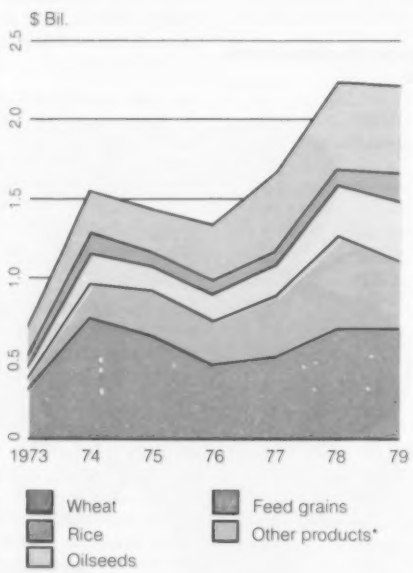
The dollar glut has made way for food policy changes in most OPEC countries. Trade barriers have been eased or removed, and the number of duty-free imports has increased.

In addition, per capita incomes have gained rapidly and national programs have been enacted to improve diets. Thus, more food from foreign markets is finding its way to OPEC dinner tables through increased imports of fruits and vegetables, dairy products, eggs, red meat, frozen poultry, and grains.

Total agricultural imports by OPEC have surged from $3.4 billion in 1973 to an estimated $18 billion this year.

All signs indicate that the OPEC market will continue to grow along with oil revenues. This should be true not only for food grains and other food products, but also for feed grains to meet the rising demand for meat, poultry, and dairy products.

U.S. Agricultural Exports to OPEC▲ Surge; Wheat and Rice Are Top Products



▲OPEC nations are Venezuela, Indonesia, Saudi Arabia, Iran, Nigeria, Algeria, Iraq, Ecuador, the United Arab Emirates, Kuwait, Libya, Qatar and Gabon.

*Includes fruits and vegetables, cotton, inedible tallow, meat, poultry, and dairy products, tobacco and other commodities.

The introduction of modern dairy and broiler operations in Mideast OPEC nations has created a larger demand for imported feed grains. OPEC feed grain imports have jumped from 1.4 million tons in 1975 to an estimated 4.1 million tons in 1979. Imports in 1980 could reach 5 million tons.

New projects to provide more poultry meat, eggs, milk, and mutton will no doubt require a continuing increase in imports of feed grains.

Challenge From Abroad

Although OPEC's agricultural imports should continue to increase, many other countries are competing with the U.S. in tapping the booming market.

While U.S. sales are setting records, the European Community (EC) has emerged as the leading supplier of agricultural products to OPEC. Last year, EC sales to OPEC totaled $3.6 billion, around $1.4 billion more than U.S. sales.

The EC has several advantages in the competition: Europe is close to many OPEC nations and has a history of closer ties going back to the time when many OPEC nations were colonies of EC members. In addition, the emerging spirit of nationalism and Third World unity has had a decidedly anti-American flavor.

Probably most important are the huge EC subsidies to OPEC to promote agricultural trade. These subsidies have allowed EC exporters to underbid U.S. suppliers, even though production costs in the EC are generally higher.

When EC wheat production is ample, wheat sales subsidies to OPEC members can be as high as $110 per ton. This is nearly equal to the price of U.S. wheat per ton. Under such circumstances, it can be impossible for U.S. suppliers to compete.

Leading EC export items to OPEC are frozen poultry, dairy products, barley, live animals, and processed foods.

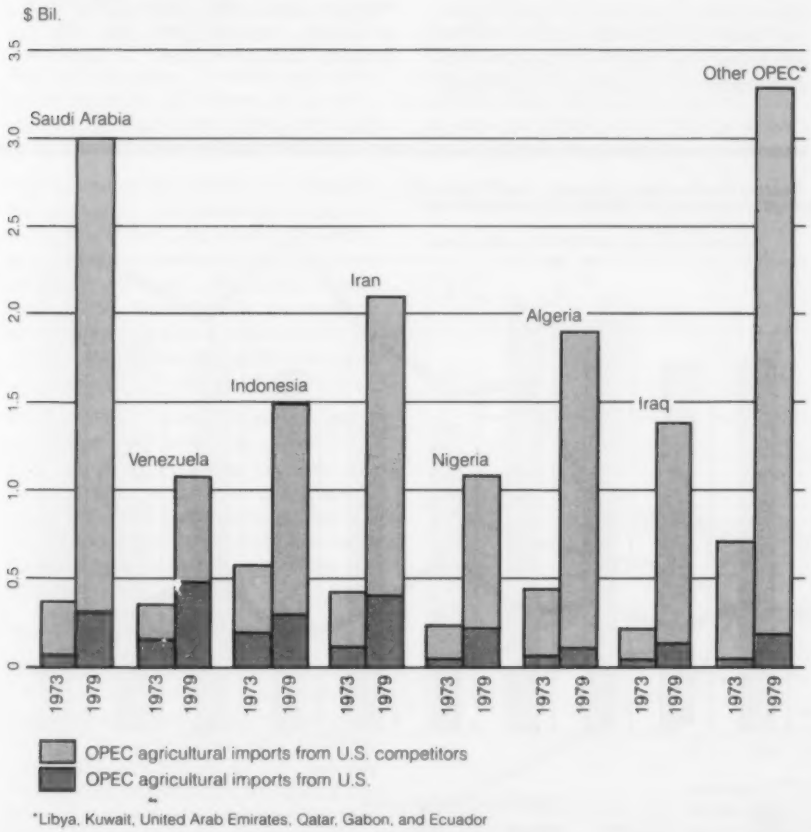
Currently, Nigeria ranks as the leading OPEC outlet for EC agricultural products, taking $750 million worth in 1979, compared with $640 million in 1978. The recent political problems in Iran and the resulting trade suspension wiped out the only OPEC market where U.S. sales led those of the EC.

Competing For Wheat Sales

The U.S. faces stiff competition for wheat markets from several countries.

Australia shipped more than 2 million tons of wheat to OPEC in 1979, including more than 500,000 tons each to Indonesia and Iraq. Last year, Turkey exported 1 million tons of wheat to OPEC, with large shipments going to Iraq, Iran, Libya, and Algeria.

U.S. Exports Facing Stiff Competition for Booming OPEC Markets



*Libya, Kuwait, United Arab Emirates, Qatar, Gabon, and Ecuador

Competition from Australia and Turkey is expected to decrease in 1980 because of shortfalls in crop production. Wheat sales by other competitors should also drop, and the U.S. should pick up most of the slack.

Despite the competition, U.S. trade experts are optimistic over the long-term growth potential for U.S. sales to OPEC. Higher oil revenues almost certainly mean further growth in demand. Also, the U.S. is probably the most reliable producer from year to year and generally has more grain available for sales abroad than most other exporting nations combined.

Even when competitors' supplies are large, OPEC is likely to continue to turn to the U.S. for a big share of its grain imports.

Some Ups And Downs This Year

For fiscal 1980, U.S. agricultural sales to OPEC are expected to be led by wheat and rice. Wheat sales to OPEC may dip to 4 million tons, compared with 4.3 million tons in fiscal 1979.

Rice now rivals wheat as the largest of all U.S. food commodities exported to OPEC. U.S. rice exports have increased from 205,000 tons in 1973 to an estimated 1.3 million tons for 1980.

Large increases are also expected in U.S. exports of corn, eggs, vegetable oil, fruit, dry beans, and canned foods.

The leading buyers of U.S. agricultural goods among OPEC member nations in 1980 are expected to be Venezuela and Saudi Arabia with sales anticipated at over $600 million. Nigeria and Indonesia are forecast to purchase over $300 million in U.S. farm goods next year, and sales to Algeria and Iraq should top $150 million.

This year's U.S. sales will represent around 12 percent of OPEC's total agricultural imports, down a bit from 1979's 15 percent.

Cotton's Future Looms Brighter

Cotton is now having its brightest season in 15 years, and prospects for the future look good.

The best news is the current export boom. With China buying heavily from U.S. farmers this season, cotton exports may reach 8.5 million bales by August—a level unmatched since 1932.

And that's not all. Although production jumped to 14.6 million bales this season—the most since 1965—initial expectations that cotton prices would weaken have not been borne out. In fact, farm prices remained firm last fall at around 61 cents a pound despite prospects for a big increase in yearend stocks.

Prices then strengthened early this year as export demand continued to climb and the estimate of ending stocks was lowered. Farm prices were averaging nearly 62 cents a pound in March, with spot prices for SLM 1-1/16" cotton shooting up to more than 80 cents.

Meanwhile, demand from domestic mills is proving stronger than earlier predicted. Despite the expected recession this year, domestic mill use will likely advance from last year's 6.4 million bales to 6.5 million in 1980.

Entwined in Developments Abroad

As with so much of U.S. agriculture, the domestic cotton industry is growing increasingly entwined in developments abroad. This season's export boom comes from increased worldwide demand coupled with only a small rise in foreign cotton production.

So far, the Chinese have purchased four times as much cotton from the U.S. as last year, when they took 650,000 bales. This steep rise is attributed to China's desire to expand cotton textile exports and increase domestic use.

The heightened demand for U.S. cotton is not coming solely from China. Shipments to East and Southeast Asia (excluding Japan and China) are expected to jump 14 percent this season, and Western Europe may take 20 percent more.

Over the past decade, foreign cotton use has grown from 47 to 58 million bales a year, while foreign production has remained stagnant, averaging about 49 million. As a result, foreign cotton stocks have dropped and dependence on imports has increased.

The U.S., which produces nearly a quarter of the world's cotton but uses only a tenth of that total, has been the primary beneficiary. U.S. exports this season will account for about 38 percent of world cotton trade.

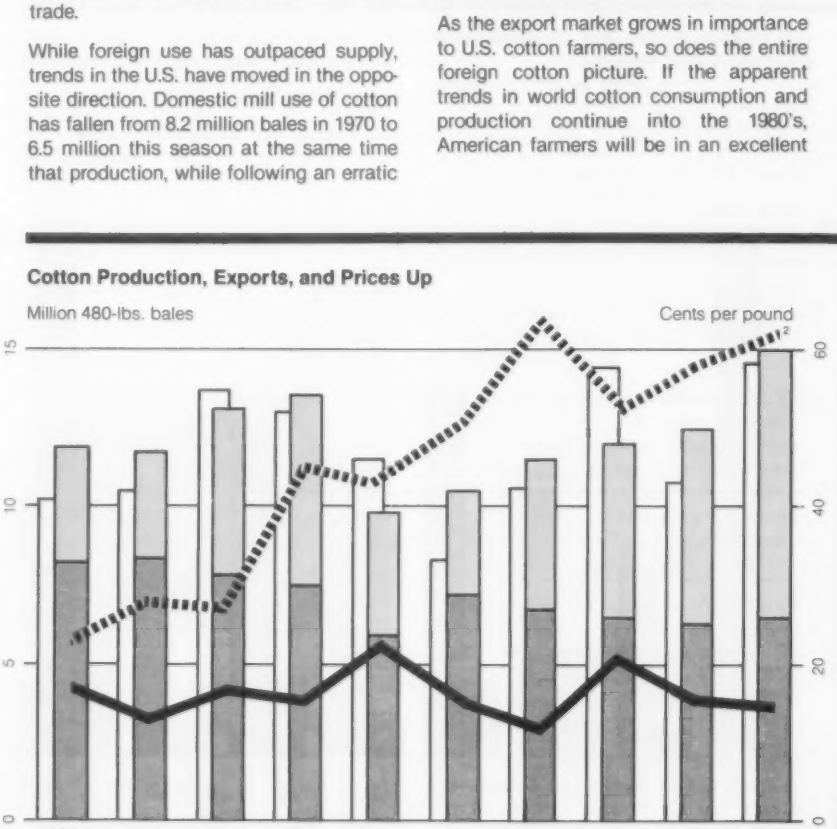
While foreign use has outpaced supply, trends in the U.S. have moved in the opposite direction. Domestic mill use of cotton has fallen from 8.2 million bales in 1970 to 6.5 million this season at the same time that production, while following an erratic path, has risen from 10 million bales to 14.6 million.

Nevertheless, with foreign demand on the rise, U.S. cotton farmers have increased production without sacrificing income. In 1970, the season average farm price for cotton was about 23 cents a pound. Now it is over 61 cents (about 33 cents in 1970 dollars), with exports exceeding domestic use for the first time in over four decades.

Favorable Signs On Foreign Front

As the export market grows in importance to U.S. cotton farmers, so does the entire foreign cotton picture. If the apparent trends in world cotton consumption and production continue into the 1980's, American farmers will be in an excellent

Cotton Production, Exports, and Prices Up



[1]Crop year beginning August 1.
[2]Average price through March 1980.
[3]Estimated

position to increase their share of the world market.

On the other hand, if foreign cotton production moves more into balance with demand in the years ahead, U.S. farmers will be forced to cut back their output or risk oversupplying the market—the situation that caused trouble for cotton in the 1950's and 1960's.

Despite the uncertainties, USDA economists expect foreign demand for raw cotton to continue strong in the 1980's as more developing nations move into the cotton textile industry. Textile manufacturing—a light-capital industry—is very attractive to less developed countries with a plentiful supply of inexpensive labor.

This trend is already apparent: raw cotton moves out of the U.S. and returns as shirts, dresses, yarn, and other textiles from such places as Korea, Hong Kong, and Taiwan.

Further, the recent cotton-dust standards established for U.S. textile mills by the Occupational Safety and Health Administration (OSHA) may encourage some domestic cotton processing operations to relocate abroad. These factors are likely to keep U.S. exports of raw cotton at 5.5 to 7.5 million bales in the coming decade—well above the 1974-79 average of 4.9 million.

So does this mean that domestic use of raw cotton will continue to shrink? Probably not. Although many elements are weighted against domestic cotton textile mills, they will probably maintain their current consumption levels, taking 6 to 7 million bales of cotton a year during the 1980's.

Facing Up To The Synthetics Challenge

While U.S. and world demand prospects seem favorable for the next few years, cotton's future ultimately depends on how it fares in its competition with synthetic fibers. Although figures for the last few decades suggest that this has been a losing battle, recent evidence indicates that cotton may have begun to hold its own.

Synthetic fibers now account for 75 percent of U.S. fiber production, while cotton's share has dipped below 25 percent. However, a look at the long-term trends shows that cotton's decline and the synthetics' rise have leveled off in the late 1970's.

Spurred by the dramatic rise in petroleum costs, polyester jumped from 53 cents a pound early in 1979 to 73 cents in March 1980. Although petroleum costs also make cotton more expensive to produce, they affect synthetic fiber production more.

Industry economists estimate that for each dollar per barrel increase in oil prices, the cost of producing polyester staple rises 1 cent per pound. The same increase raises the cost of producing cotton by as little as 0.5 cent a pound.

So while cotton prices move up and down due to supply and demand factors, a long-term escalation of oil prices could send synthetic fiber prices up indefinitely, dulling the competitive edge they have enjoyed during the last decade.

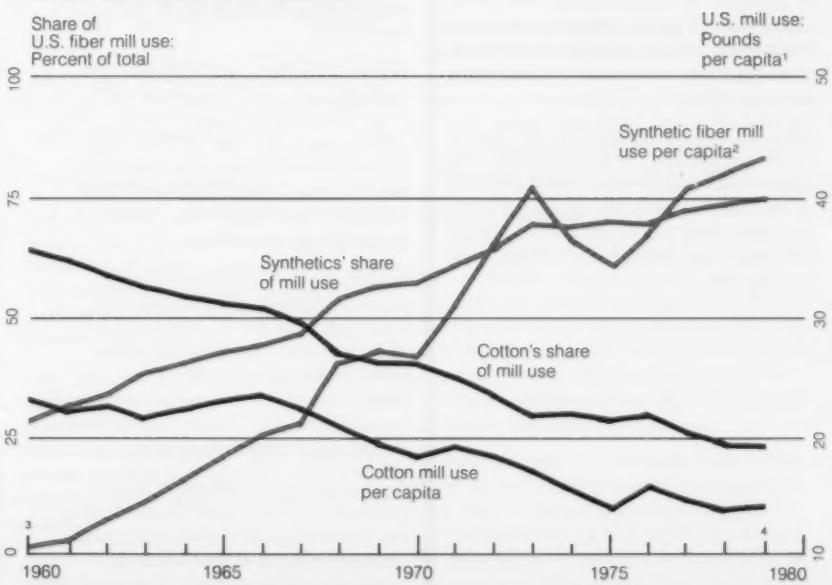
However, their one major advantage is short-term price stability. Even during a relatively chaotic season like the current one, synthetic fiber prices are much less volatile than cotton prices, and textile manufacturers are generally warned in advance of price changes. This reduces uncertainty, making synthetic fibers more attractive to textile mills.

Convenience And The Natural Look

In addition to the price factor, synthetic fibers have also been favored as a clothing material for their greater convenience. They do not shrink, and the "permanent press" process makes them much easier to maintain than cotton clothing.

However, a new ammonia treatment process for cotton fabrics could change all that. "Durable press" 100-percent cotton fabrics are now entering the retail clothing market. The durable-press process pre-

Long-Term Trend Favors Synthetics



[1]U.S. mill consumption of fibers divided by population.
[2]Includes manufactured waste reported by *Textile Organon*.
[3]Year beginning January 1.
[4]Estimated.

vents shrinkage and wrinkling—the two traditional headaches facing owners of cotton clothes.

The new process was first used in 1975 for heavyweight denim fabrics, giving denim jeans a wrinkle-free appearance. Since then, the process has been improved for use on shirting-weight cotton, and several major shirtmakers are beginning to test the market for durable-press cotton shirts.

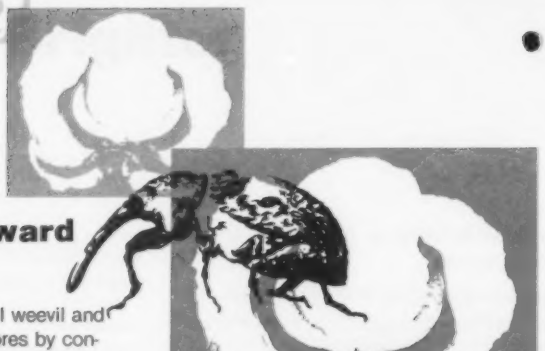
Since American consumers seem to be leaning heavily toward "natural" products throughout the marketplace—and considering the popularity denim, corduroy, velour, and terry cloth have enjoyed in recent years—Americans may well welcome a resurgence in cotton clothing, especially if it's as easy to care for and as affordable as polyester.

However, the synthetic fiber industry is also preparing to accommodate this shift in consumers' tastes, developing fibers with "natural" characteristics for the 1980's.

In addition, if Saudi Arabia and other OPEC nations begin producing synthetic fibers in the 1980's—as some analysts believe—cotton's competition would grow even stronger.

Although cotton will continue to face intense competition from synthetics, its future looms brighter now than at any time in the last two decades. At least for the next few years, U.S. exports of raw cotton will likely stay strong, with domestic use holding firm.

Cotton's Westward Expansion



Urged westward by the boll weevil and passed over in clothing stores by consumers itching for synthetic "wonder" fabrics, cotton's importance to American agriculture was waning in the 1960's and early 1970's.

Cotton reached its nadir in 1967, when plantings plummeted to 9.5 million acres, partly reflecting an acreage diversion program designed to reduce cotton stocks. Planted acreage had totaled 16 million in 1960. Considering that in the 1920's and 1930's cotton acreage hovered around the 40-million-acre mark, cotton's future looked bleak.

In 1968, synthetic fibers surpassed cotton in the domestic fiber market, and cotton's share has gone downhill ever since. With exports at a low ebb, domestic use weakening, and cotton farmers hurting, agricultural literature began featuring obituaries to the former king.

Those obituaries were premature. For example, while cotton acreage today is no match for the peaks of the 1920's, production has suffered only slightly thanks to improved technology that has more than tripled yields from 162 pounds per acre in the 1920's to a record 541 pounds last year.

In 1926, when farmers harvested a record 44.6 million acres, production stood just short of 18 million bales. In 1979, with only 14 million harvested acres, production hit 14.6 million bales.

Technology And Topography

Such a dramatic increase in output per acre could not have occurred without equally dramatic shifts in regional production patterns and methods.

Technological innovations—such as the mechanical harvester—and more intensive production tools—such as irrigation—speeded the geographical shifts. Searching for ways to increase their returns and for land suited to modern machinery, southeastern farmers turned to other crops—particularly soybeans—while many farmers in the Southwest and West started growing cotton.

The economic factors that caused the long-term trend toward larger and fewer farms throughout U.S. agriculture contributed to the shift. As labor—the backbone of cotton farming in its heyday—became more expensive and general inflation set in during the 1950's, cotton producers were forced to become more efficient.

Topography also played a major role in the search for more productive land. Broad, flat land enabled cotton farmers to easily use technology's new machines. And even if the climate was too dry or the soil poor, a vast expanse of level land readily lent itself to irrigation and fertilization.

Cotton Shifts Westward

This quest for better land helped push cotton out of the southeastern states of Virginia, North Carolina, South Carolina, Georgia, Florida, and Alabama—which in the 1920's accounted for about a third of cotton production—and to the West.

In 1920, California, Arizona, New Mexico, and Nevada accounted for only 1 percent of U.S. cotton output. By the 1960's, their share had risen to 20 percent. During the same period, the Southeast's share dropped to about 12 percent.

For Pests, It's IPM

In the Delta states and the Southwest, the share remained relatively constant at 65 to 70 percent of U.S. production, but the areas used for growing cotton within those regions shifted as farms grew larger and farmers sought out better land.

In 1974, the Government eliminated income support payments for cotton based on historical production patterns. Until then, these payments kept in business many smaller, less efficient producers who had a disproportionate share of the U.S. cotton allotment.

After that, the shift to the West accelerated. Between 1974 and 1979, the West's share of cotton production rose from about 20 percent to roughly a third. The Southeast's share nosedived from 12 percent to 4 percent.

High Yields, But Water Crucial

The westward expansion of cotton acreage has great implications for the future. Due to irrigation and a relative freedom from insect losses, Arizona and California producers regularly achieve yields over 1,000 pounds per acre—roughly double the national average.

In 1979, insects claimed 23 percent of Alabama's crop, 31 percent of Georgia's, and 14 percent of Mississippi's. Losses were only 6 percent in California and less than 1 percent in Arizona.

Unless the West's water supplies suffer a disastrous decline—which some analysts fear—these areas will probably receive even more emphasis as cotton country in coming years. Last year, the Southwest and West accounted for 75 percent of U.S. cotton production—the first time their share topped 70 percent.

So although soybeans may have replaced cotton as the South's main crop, the former king—for now—has apparently found a new home.

One term likely to become more common in the agricultural sector in the 1980's is "Integrated Pest Management."

Integrated pest management (IPM) is a way of applying current technology and knowledge in a concerted approach to dealing with pests and pest complexes (insects, weeds, and disease).

Despite all of today's control efforts, on which U.S. farmers spend $3-$5 billion annually, experts estimate that billions of dollars worth of U.S. crops is lost each year to insects, disease, and weeds. Rising costs, pest resistance to chemicals, and health and environmental concerns have intensified the search for better pest monitoring and control techniques.

The primary objective of IPM is to reduce crop losses from pest infestation while reducing dependence on environmentally damaging chemicals through the application of various combinations of pest control techniques. The federal government and private industry are joining forces to develop safe, efficient, and cost effective integrated pest management strategies.

While no one expects IPM to eliminate all pest losses, it promises a safer, more economical, and more effective strategy for combating agricultural pests.

Profits And Food, Too

IPM focuses on the entire crop, soil, and pest complex in an effort to assure producers' profits and an abundant food supply. It matches up-to-date pest monitoring with appropriate cultural, biological, and chemical controls.

Biological and cultural techniques are used to create a favorable environment for natural enemies; modify pest populations; and make use of pest-resistant strains of plants, pheromones (insect sex attractants), microbial agents, and growth regulators.

Since 1974, USDA policy has been to promote biological pest controls whenever feasible. USDA conducts most of the research and development on these measures because the costs are extremely high and the profit incentives are not sufficient to compensate private industry for expenses.

Parasitic Wasps

USDA's Economics, Statistics, and Cooperatives Service (ESCS) recently investigated the economic feasibility of using a parasitic wasp (pediobius fovolatus) to control the Mexican bean beetle on soybeans in the Delaware-Maryland-Virginia Peninsula (Delmarva).

Initial findings were that this biological agent could, through an organized regional program, reduce the use of pesticides on the environment without hurting farm revenues.

The use of this parasitic wasp along with field scouts (who monitor actual insect levels in the field) to manage the Mexican bean beetle on Delmarva's soybeans could lower insect control costs by an estimated average of $1.47 per acre. This could increase net revenue per soybean acre by 71 cents over that expected from conventional methods.

Although biological agents can be effective without upsetting the existing environmental balances, chemical pesticides will continue to be vitally important. If their use were halted tomorrow, some authorities estimate that 9 percent of current U.S. crop production would be lost to pests.

USDA Funding

To date, USDA has funded many of the private IPM projects across the country which have refined techniques and demonstrated the economic advantages of IPM. These projects are rapidly winning converts among producers who are the first to see the economic advantages of IPM over routine pesticide applications.

IPM services are available from universities and Extension offices, private consultants, agricultural cooperatives, and representatives of the pesticide industry. These services include the monitoring of pests by field scouts during periods in the life cycle of the pest; biological, chemical, and economic analysis; and specific pest management programs designed for a particular crop, pest, or ecosystem.

DEPARTMENT

Farmline Trends

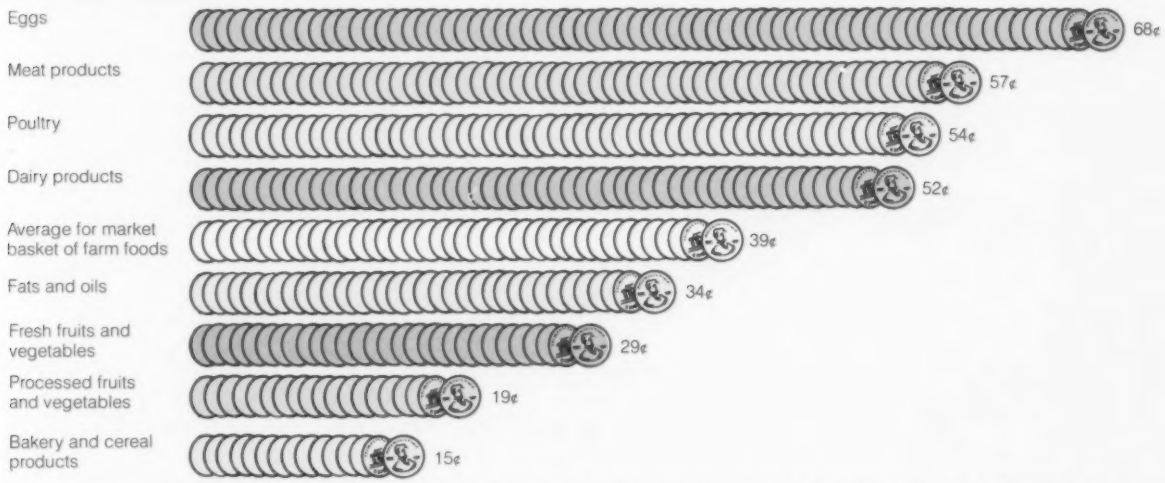
	1977 Annual	1978 Annual	1979 Quarters I	1979 Quarters II	1979 Quarters III	1979 Quarters IV	1979 Annual	1980 Quarters I	1980 Quarters II	1980 Quarters III
									Forecast	
					1967 = 100					
Farm Prices And Production:										
Prices received by farmers	183	210	240	245	241	237	241	238	242	246
Livestock and products	175	217	263	265	248	252	257	254	259	263
Crops	192	203	213	222	233	222	223	220	224	227
Prices paid by farmers, all items	202	219	239	248	253	258	250	271	279	—
Production items[1]	208	226	251	260	263	267	261	283	292	—
Farm production	121	121	—	—	—	—	129	—	—	—
Livestock and products	106	106	—	—	—	—	107	—	—	—
Crops	130	131	—	—	—	—	144	—	—	—
					1967 = 100					
Retail Prices:										
Food	192	211	228	234	237	240	235	245	252	259
At home	190	210	227	233	235	237	233	242	249	256
Away-from-home	200	218	233	241	246	251	243	258	264	270
Farm Food Market Basket:										
Retail cost	179	199	217	224	224	225	223	231	236	243
Farm value	178	208	238	236	227	228	232	230	234	241
Spread	180	194	205	216	223	224	217	232	239	245
Farmer's share (percent)	38	39	41	40	38	38	39	38	37	38
Per Capita Food Use:										
All products	105	105	—	—	—	—	104	—	—	—
Animal-products[2]	103	102	100	100	101	105	101	101	101	102
Crop-products	106	107	—	—	—	—	106	—	—	—
					billion dollars					
Farm Income:[3]										
Cash receipts	95.7	111.0	129.2	129.1	127.2	130.4	128.9	132.9	132.4	—
Livestock	47.4	59.0	69.8	67.8	65.2	66.2	67.2	68.3	66.8	—
Crops	48.2	52.1	59.4	61.3	62.0	64.2	61.7	64.6	65.6	—
Total gross farm income[4]	108.5	126.0	145.2	146.2	145.0	150.6	146.7	151.0	149.6	—
Production expenses	88.8	98.1	109.2	112.2	115.2	118.2	113.7	122.6	126.9	—
Net farm income	19.8	27.9	36.0	34.0	29.8	32.4	33.0	28.4	22.7	—
Trade:[5]										
Agricultural exports	24.0	27.3	8.2	7.7	7.9	8.2	32.0	11.0	9.8	9.5
Agricultural imports	13.4	13.9	3.9	4.1	4.4	3.8	16.2	4.4	4.7	4.8

[1] Includes interest, wage rates, and taxes.
[2] Quarterly data exclude fish products. [3] Quarterly data are seasonally adjusted at annual rates.
[4] Includes net change in farm inventories.
[5] Based on October-September fiscal years ending with the indicated year; i.e. "1979" means Oct. 1978-Sept. 1979 and "I 1979" means Oct. 1978-Dec. 1978 (the first quarter of fiscal 1979).

Where The Food Dollar Goes

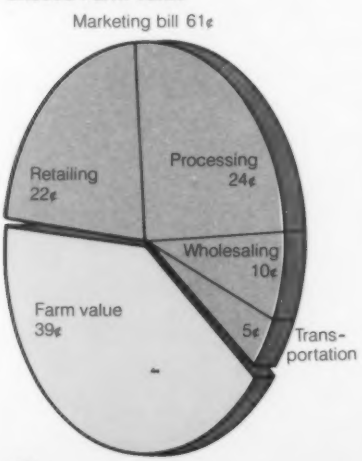
The farm share of the retail food dollar spent for a market basket of farm foods averaged about 39 cents in 1979. The biggest part of the food dollar covers the costs of marketing foods after they leave the farm. Nonfarm labor and food packaging costs are the major components of the marketing bill. This year, as last, higher marketing costs are expected to account for more than half of the rise in retail food prices.

Products Differ in Farm Share of Food Dollar*



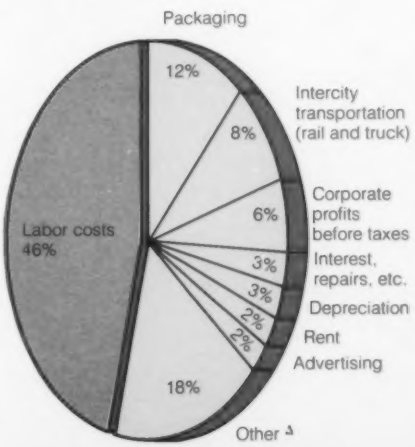
*The farm share is the payment to farmers for quantities of food commodities, less the allowance for byproducts, equivalent to the retail unit. Preliminary 1979 data.

The Food Dollar: Processing and Distribution Costs Exceed Farm Value*



*Based on consumer expenditures for domestic farm foods from retail food stores, 1978.

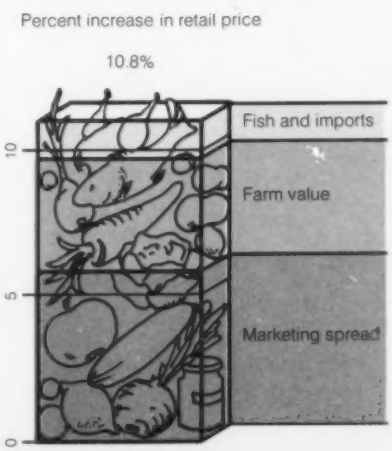
Labor Takes Nearly Half of Food Marketing Costs*



*Based on foods marketed through food stores as well as away-from-home eating places, 1978.

ΔOther includes such costs as utilities, fuel, promotion, local hired transportation, and insurance.

Marketing Costs Caused Much of 1979 Food Price Rise*



*Farm value and marketing spread from U.S. farm food market basket. Total price change from food-at-home index, Bureau of Labor Statistics.

U.S. DEPARTMENT OF AGRICULTURE
ECONOMICS, STATISTICS, AND
COOPERATIVES SERVICE

OFFICIAL BUSINESS
PENALTY FOR PRIVATE USE $300

To stop mailing ☐ or to change your address ☐ send mailing label on this magazine and new address to *Farmline*, Rm. 505 GHI Bldg., ESCS, USDA, Washington, D.C. 20250.

POSTAGE AND FEES PAID
U.S. DEPARTMENT OF
AGRICULTURE
AGR 101
BULK THIRD CLASS